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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/539,032	03/30/2000	Samir Kumar Brahmachari	KNS3.001AUS	7985

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EXAMINER	
CLOW, LORI A	

ART UNIT	PAPER NUMBER
1631	

NOTIFICATION DATE	DELIVERY MODE
06/04/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	09/539,032	BRAHMACHARI ET AL.	
	Examiner	Art Unit	
	Lori A. Clow, Ph.D.	1631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 March 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4 and 6-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4 and 6-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Applicants' response, filed 3 March 2008, has been fully considered. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set presently being applied to the instant application.

Claims 1-4 and 6-9 are currently pending. Claims 5 and 10-12 have been cancelled.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 and 6-9 remain rejected under 35 U.S.C. 102(b) as being anticipated by Bruccoleri et al. (Nucleic Acids Research (1998) vol. 26, no. 19, pages 4482-4486), for the reasons set forth in the previous Office Action and re-iterated below.

Instant claim 1 is essentially drawn to a computer-based method of identifying conserved peptide motifs useful as drug targets comprising generating overlapping peptide sequences from pathogenic organisms of length N; sorting the peptide sequences to produce matched common peptides; locating matched common peptide sequences in their corresponding protein sequences to gather location and labeling origin and location; joining overlapping common sequences; and comparing extended conserved sequences to a host organism protein sequence to determine which of the conserved peptides are not present in the host.

Bruccoleri et al. teach a method of concordance analysis of microbial genomes in which a set of proteins are computationally analyzed to determine concordance of putative gene products that show sets of proteins conserved across one set of user specified genomes and not present in another set of user specified genomes (abstract). The system uses a relational database to store protein coding regions from different genomes and to store the results of a complete comparison of all sequences against sequences using FASTA. A display, using CLUSTALW can be performed for all related proteins for a given sequence (abstract). Bruccoleri teaches the generation of overlapping sequence alignments from pathogenic organisms (page 4483, Table 3); homolog matching (page 4483, column 1); target sequence CLUSTALW alignment for all sequences (page 4483, column 2); an alignment of just matching gene product against the corresponding gene product in the target; and exclusion criteria. Therefore, Bruccoleri et al. teach the limitations of claim 1.

In regard to claim 2, Bruccoleri teaches a genome of at least 4 (sequence length) (page 4483, Table 3 teaches the *E. coli* genome. The *E. coli* genome contains 4,289 encoded proteins.

In regard to claim 3, Bruccoleri teaches the selected pathogenic organism that includes at least *M. turberculosis* (page 4483, Table 3).

In regard to claim 4, Bruccoleri teaches the *M. turberculosis* genome at Table 3, therefore, it inherently comprises the DNA gyrase subunit of SEQ ID NO: 67 (**VRKRPGMYIG**) (as seen in GenBANK Accession number YP 001285950; amino acids 65-74).

In regard to claim 6, Bruccoleri teaches the *M. turberculosis* genome at Table 3, therefore, it inherently comprises DNA gyrase subunit B, as noted above.

In regard to claim 7, Bruccoleri teaches selecting organism manes from a menu (page 4483, Table 2).

In regard to claim 8, Bruccoleri teaches selecting protein sequences and labeling them with an id number, a location and a name (page Table 3 and Table 4).

In regard to claim 9, Bruccoleri teaches determining overlapping sequences (CLUSTALW; page 4483, col. 2).

As Bruccoleri anticipates each of claims 1-3 and 6-9, no claims are allowed.

Response to Applicants' Arguments

1. Applicant argues that "claim 1 relates to genome analysis at the peptide level" and that "in contrast, Bruccoleri et al. perform their analysis at the protein level, not by comparing peptide sequences across organisms to determine conserved peptide sequences that can be used as drug targets as recited in the present claims". Further Applicant asserts that "Bruccoleri et al. is concerned with determination of conserved proteins across genomes, not of conserved peptide sequences" and that "nowhere in Bruccoleri et al. is it taught to break down protein sequences into peptides and analyze the genome at the peptide level to determine conserved peptide sequences that can be used as potential drug targets".

This is not persuasive. Firstly, as is commonly known in the art, a peptide sequence is one that comprises a series of amino acids joined together by peptide bonds. The peptide can consist of two to several hundred amino acids. Therefore, a peptide is a protein. Secondly, the instant claims are drawn to the identification of conserved peptide motifs useful as drug targets comprising generating overlapping peptide sequences. Bruccoleri et al. teach exactly the steps of

identification of overlapping sequences (which would reasonably be peptides, given they are not complete sequences) and identifying potential drug targets, as stated above. The instant claims are also drawn to matching peptides of selected pathogenic organisms, thus genomes of organisms are utilized for such a purpose. The instant claim contains sequences, such as those in the *M. turberculosis* genome, which is part of DNA gyrase subunit B. Bruccoleri et al. also analyze the DNA gyrase coding regions (again, peptide regions within a protein). Therefore, Bruccoleri et al. anticipate each of claims 1-4 and 6-9.

Conclusion

No claims are allowed.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Inquiries

Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the PTO Fax Center. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993) (See 37 CFR § 1.6(d)). The Central Fax Center Number is (571) 273-8300.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lori A. Clow, Ph.D., whose telephone number is (571) 272-0715. The examiner can normally be reached on Monday-Friday from 10 am to 6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marjorie Moran can be reached on (571) 272-0720.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

June 4, 2008
/Lori A. Clow, Ph.D./
Primary Examiner, Art Unit 1631

Application Number	Application/Control No.	Applicant(s)/Patent under Reexamination	
	09/539,032	BRAHMACHARI ET AL.	
	Examiner	Art Unit	
	Lori A. Clow, Ph.D.	1631	